

CLAIMS

That which is claimed is:

1. A sole structure of an article of footwear, the sole structure comprising:
a fluid-filled chamber having a first surface, an opposite second surface, and a sidewall extending between the first surface and the second surface, the first surface and the second surface being devoid of internal connections that secure interior portions of the first surface to interior portions of the second surface, and the sidewall being joined with the first surface and the second surface to seal the fluid within the chamber, the first surface, second surface, and sidewall defining a plurality of lobes extending outward from a central area, the lobes being in fluid communication with the central area, and the lobes defining spaces positioned between the lobes located adjacent to each other; and
a resilient material surrounding at least a portion of the chamber, the resilient material extending into the spaces.
2. The sole structure recited in claim 1, wherein a pressure of the fluid is in a range of zero to five pounds per square inch.
3. The sole structure recited in claim 1, wherein a pressure of the fluid is approximately equal to an ambient pressure of air surrounding the sole structure.
4. The sole structure recited in claim 1, wherein the fluid is air.
5. The sole structure recited in claim 1, wherein the first surface and the second surface have a substantially planar configuration.
6. The sole structure recited in claim 1, wherein at least one of the first surface and the second surface has a curved configuration.
7. The sole structure recited in claim 6, wherein at least a portion of said sidewall is substantially planar.

8. The sole structure recited in claim 1, wherein at least a portion of said sidewall has a curved configuration.
9. The sole structure recited in claim 1, wherein a first portion of the sidewall is positioned adjacent the spaces, the first portion of the sidewall having a sloped configuration.
10. The sole structure recited in claim 9, wherein the first portion has a first area positioned adjacent the central area, and the first portion has a second area positioned adjacent the lobes, the first area having a lesser slope than the second area.
11. The sole structure recited in claim 9, wherein a second portion of the sidewall is positioned adjacent distal ends of the lobes, the second portion of the sidewall having a substantially vertical slope.
12. The sole structure recited in claim 1, wherein the chamber is symmetrical about a plane extending through the chamber.
13. The sole structure recited in claim 1, wherein a material forming the first surface, the second surface, and the sidewall is a polymer.
14. The sole structure recited in claim 1, wherein a material forming the first surface, the second surface, and the sidewall is a thermoplastic polymer.
15. The sole structure recited in claim 1, wherein the chamber includes at least five of the lobes.
16. The sole structure recited in claim 1, wherein the resilient material extending into the spaces forms columns of the resilient material.

17. The sole structure recited in claim 16, wherein the columns contact the sidewall and are shaped to correspond with a shape of the spaces.

18. The sole structure recited in claim 16, wherein the spaces and the columns extend between the first surface and the second surface.

19. The sole structure recited in claim 1, wherein the chamber is positioned in a heel area of the sole structure and adjacent a lower surface of the resilient material.

20. The sole structure recited in claim 1, wherein the resilient material is a polymer foam material.

21. The sole structure recited in claim 1, wherein the chamber is a bladder and the first surface, second surface, and sidewall are formed from layers of a polymer material.

22. The sole structure recited in claim 1, wherein the lobes extend radially outward from the central area.

23. An article of footwear having an upper and a sole structure secured to the upper, the sole structure comprising:

an air-filled chamber formed of a polymer material and having a first surface, an opposite second surface, and a sidewall extending between the first surface and the second surface, the sidewall being joined with the first surface and the second surface to seal the air within the chamber at an air pressure approximately equal to an ambient pressure of air surrounding the sole structure, the first surface, second surface, and sidewall defining a plurality of lobes extending outward from a central area, the lobes being in fluid communication with the central area, and the lobes defining spaces positioned between the lobes located adjacent to each other; and

a polymer foam material surrounding at least a portion of the chamber, the polymer foam material extending into the spaces.

24. The article of footwear recited in claim 23, wherein the first surface and the second surface are devoid of internal connections that secure interior portions of the first surface to interior portions of the second surface.
25. The article of footwear recited in claim 23, wherein the lobes extend radially outward from the central area.
26. The article of footwear recited in claim 23, wherein the first surface and the second surface have a substantially planar configuration.
27. The article of footwear recited in claim 23, wherein at least one of the first surface and the second surface has a curved configuration.
28. The article of footwear recited in claim 23, wherein the chamber includes at least five of the lobes.
29. The article of footwear recited in claim 23, wherein the chamber is positioned in a heel area of the sole structure and the second surface is adjacent a lower surface of the polymer foam material.
30. The article of footwear recited in claim 23, wherein a first portion of the sidewall is positioned adjacent the spaces, the first portion of the sidewall having a sloped configuration.
31. The article of footwear recited in claim 30, wherein the first portion has a first area positioned adjacent the central area, and the first portion has a second area positioned adjacent the lobes, the first area having a lesser slope than the second area.
32. The article of footwear recited in claim 30, wherein a second portion of the sidewall forms distal ends of the lobes, the second portion of the sidewall having a substantially vertical slope.

33. The article of footwear recited in claim 23, wherein the chamber is symmetrical about a plane extending through the chamber.
34. The article of footwear recited in claim 23, wherein the polymer foam material extending into the spaces forms columns of the polymer foam material.
35. The article of footwear recited in claim 34, wherein the columns contact the sidewall and are shaped to correspond with a shape of the spaces.
36. The article of footwear recited in claim 34, wherein the foam material extends between the first surface to the second surface.
37. The article of footwear recited in claim 23, wherein the chamber is a bladder.
38. The article of footwear recited in claim 37, wherein the material forming the bladder is a thermoplastic elastomer.
39. The article of footwear recited in claim 37, wherein distal ends of the lobes extend through the polymer foam material.
40. An article of footwear having an upper and a sole structure secured to the upper, the sole structure incorporating a chamber comprising:
 - a first surface, an opposite second surface, and a sidewall extending between edges of the first surface and the second surface, the sidewall being joined with the first surface and the second surface, and the first surface and the second surface being devoid of internal connections that secure interior portions of the first surface to interior portions of the second surface;
 - a fluid sealed within the chamber at a pressure that is substantially equal to an ambient pressure of air surrounding the footwear; and

a plurality of lobes extending outward from a central area, the lobes being defined by the first surface, second surface, and sidewall, and the lobes being in fluid communication with the central area,

wherein compressing the chamber increases a tension in at least the first surface.

41. The article of footwear recited in claim 40, wherein the lobes extend radially outward from the central area.

42. The article of footwear recited in claim 40, wherein the first surface and the second surface have a substantially planar configuration.

43. The article of footwear recited in claim 42, wherein the chamber includes at least five of the lobes.

44. The article of footwear recited in claim 40, wherein at least one of the first surface and the second surface has a curved configuration.

45. The article of footwear recited in claim 40, wherein a first portion of the sidewall is positioned adjacent the spaces, the first portion of the sidewall having a sloped configuration.

46. The article of footwear recited in claim 45, wherein the first portion has a first area positioned adjacent the central area, and the first portion has a second area positioned adjacent the lobes, the first area having a lesser slope than the second area.

47. The article of footwear recited in claim 45, wherein a second portion of the sidewall forms distal ends of the lobes, the second portion of the sidewall having a substantially vertical slope.

48. The article of footwear recited in claim 40, wherein the lobes define spaces positioned between the lobes located adjacent to each other.

49. The article of footwear recited in claim 47, wherein the chamber is at least partially encapsulated within a polymer foam material and a portion of the polymer foam material extends into the spaces.
50. The article of footwear recited in claim 49, wherein the polymer foam material extending into the spaces forms columns of the polymer foam material.
51. The article of footwear recited in claim 50, wherein the columns contact the sidewall and are shaped to correspond with a shape of the spaces.
52. The article of footwear recited in claim 50, wherein the foam material extends between the first surface to the second surface.
53. The article of footwear recited in claim 40, wherein the fluid is air.
54. The article of footwear recited in claim 40, wherein the chamber is a bladder.
55. The article of footwear recited in claim 54, wherein the material forming the bladder is a thermoplastic elastomer.
56. The article of footwear recited in claim 54, wherein distal ends of the lobes extend through the polymer foam material.
57. A bladder for an article of footwear, the bladder comprising:
a first surface, an opposite second surface, and a sidewall extending between edges of the first surface and the second surface, the sidewall being joined with the first surface and the second surface, and the first surface and the second surface being devoid of internal connections that secure interior portions of the first surface to interior portions of the second surface, at least one of the first surface and the second surface having a curved configuration;

air sealed within the bladder at a pressure approximately equal to an ambient pressure;
and

a plurality of lobes extending radially outward from a central area, the lobes being
defined by the first surface, second surface, and sidewall, and the lobes being in
fluid communication with the central area,

wherein compressing the bladder increases a tension in at least the first surface.

58. The bladder recited in claim 57, wherein the bladder includes at least three of the lobes.

59. The bladder recited in claim 57, wherein a first portion of the sidewall is positioned
adjacent the spaces, the first portion of the sidewall having sloped configuration.

60. The bladder recited in claim 59, wherein a second portion of the sidewall is positioned
adjacent distal ends of the lobes, the second portion of the sidewall having a substantially vertical
slope.

61. The bladder recited in claim 57, wherein the lobes define spaces positioned between the
lobes located adjacent to each other.

62. The bladder recited in claim 61, wherein the bladder is at least partially encapsulated
within a polymer foam material and a portion of the polymer foam material extends into the
spaces.

63. A bladder for an article of footwear, the bladder comprising:
a first surface and an opposite second surface; and
a parting line that forms a bond between material forming the first surface and material
forming the second surface, the parting line being non-centrally located with
respect to the first surface and the second surface.

64. The bladder recited in claim 63, wherein the parting line is formed in a sidewall of the
bladder.

65. The bladder recited in claim 64, wherein the parting line extends from the first surface to the second surface in at least one portion of the bladder.

66. The bladder recited in claim 63, wherein the parting line has a non-linear configuration.

67. The bladder recited in claim 63, wherein a first portion of the parting line is positioned adjacent the first surface, a second portion of the parting line is positioned adjacent the second surface of the chamber, and a third portion of the parting line extends between the first surface and the second surface.

68. The bladder recited in claim 63, wherein a plurality of lobes that extend outward from a central area of the bladder.

69. The bladder recited in claim 68, wherein the lobes extend radially outward from the central area.

70. The bladder recited in claim 68, wherein the lobes are in fluid communication with the central area.

71. The bladder recited in claim 63, wherein at least one of the first surface and the second surface has a curved configuration.